

Alberta's Agriculture Growth Strategy



\$20B/\$10B by 2010

Driving Sustainable Growth

July 2004

Alberta

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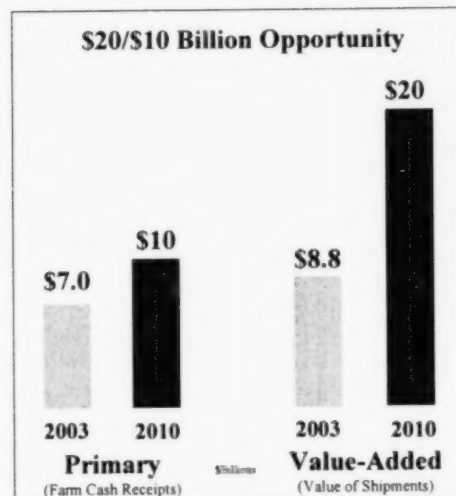
Introduction

Achieving a \$20 billion value added agriculture industry and a \$10 billion primary industry has been discussed and debated many times within Alberta Agriculture, Food and Rural Development (AAFRD) and by industry as a whole. When AAFRD began talking about the \$20/\$10 billion opportunity in the mid 1990s, it was considered a stretch target. There were no mechanisms in place by government or industry to seriously consider it as a real opportunity. There was no game plan; however, AAFRD has over time incorporated and identified the opportunity in its business plan. Industry organizations also began to incorporate it into their planning as well.

The Growth Strategy paints a picture of a \$20/\$10 billion industry in 2010, identifies "unstoppable" trends and develops new ways to grow. It recognizes that challenges and opportunities arise from environmental, technological and market changes. And, it creates solutions, such as new initiatives and program/policy changes, that are required by industry and that will have the greatest impact on generating sustainable growth.

The strategy takes a long-term view of industry growth and recognizes there will be ups and downs from year to year. Short-term losses have occurred in some sectors as a result of back-to-back droughts and the incidence of BSE, but new opportunities are emerging and other sectors continue to grow.

The strategy identifies five key industry sectors that have significant opportunities for growth (i.e. growth of \$1 billion or more by 2010). It also identifies important opportunities with possibly less significant growth potential in other sectors of the agriculture and food industry.



In addition to identifying areas of potential growth, the strategy attempts to identify significant constraints or barriers that will have to be resolved in order for growth to occur. These constraints will have to be addressed as fully as possible along with recommendations for policy and program changes. This will involve both government and industry working together towards achieving the industry opportunity of \$20/\$10 by 2010.

The strategy has been developed in coordination with other strategic initiatives in the province, including *Securing Tomorrow's Prosperity* (Alberta's Value-Added Strategy) and the *Alberta Agricultural Research and Innovation Strategic Framework*. *Securing Tomorrow's Prosperity* is a cross ministry initiative to develop an integrated value-added strategy for the province. The *Agricultural Research and Innovation Strategic Framework* is intended to leverage funds and provide direction and focus to the R & D system in Alberta.

State of the Industry

Over the past two decades, Alberta's agriculture and food industry has experienced substantial growth and development. Its \$6.99 billion (yr 2003) in farm cash receipts makes it the second largest agricultural producing province in Canada after Ontario (\$8.31 billion). And, its \$8.8 billion food and beverage industry is Alberta's largest manufacturing sector. The industry generated 19.1% of all manufactured goods in Alberta, ahead of the next largest sectors of chemical products (18.1%) and petroleum and coal products (17.9%). Alberta's agri-food exports of \$4.2 billion represent 17% of Canada's total.

Many sectors of the industry have been severely affected by two consecutive years of drought, the discovery of a case of Bovine Spongiform Encephalopathy (BSE) on an Alberta farm in May 2003, and the appreciation of the Canadian dollar.

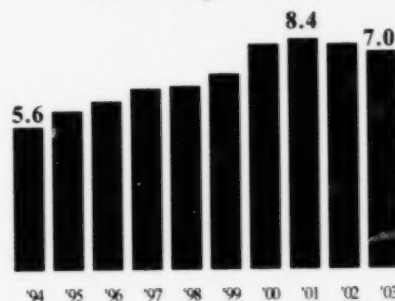
Preliminary estimates for 2003 show that Alberta farm cash receipts (FCR) declined to \$6.99 billion or 16.5% below the 2002 total of \$8.33 billion. Even though the 2003 receipts were the fourth-highest on record, they were the lowest since 1999, and represented a 5.6% decline from the five-year (1998-2002) average of \$7.45 billion.

Receipts from cattle and calves fell sharply to \$2.55 billion in 2003, down 34.1% from \$3.87 billion a year earlier. As of January 2004, Alberta continues to lead the nation in cattle and calf inventories at 5.68 million head, or 39.7% of the national total. Hog production saw a slight decrease in 2003 with market receipts falling 1.5% to \$458.4 million. Dairy, poultry and egg production rose 4.1% to \$577.9 million in receipts in 2003. Crop receipts decreased 16.8% to \$1.85 billion, from \$2.22 billion in 2002. The 2003 receipts were the lowest since 1993, and represented a 19.1% decline from the five-year average of \$2.33 billion.

Program payments increased markedly in 2003 in order to assist farmers affected by

the dual effects of drought and BSE. Total direct program payments escalated in 2003 to a record \$1.36 billion, up 31.1% from the previous record of \$1.04 billion in 2002.

**Alberta Farm Cash Receipts
1994-2003p, \$ Billions**



Source: Statistics Canada p - preliminary

Farm Cash Receipts & Exports, 2003p

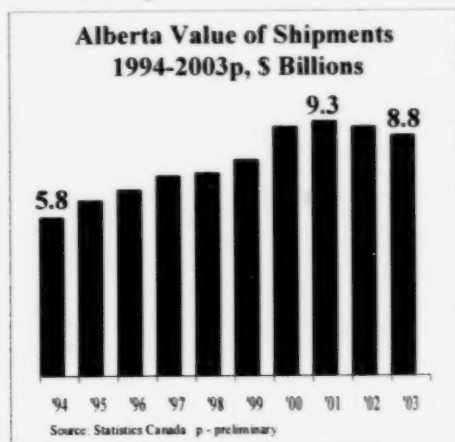
Product Category	Receipts (\$000,000)	Exports (\$000,000)
Livestock Total	3,786.9	270.2
Hogs	458.4	54.3
Cattle and Calves	2,547.1	196.1
Dairy	384.7	N/A
Crops Total	1,851.1	1,494.7
Wheat	615.3	678.9
Barley	138.8	60.3
Canola	550.1	564.0
Direct Payments Total	1,362.0	N/A
Total	6,999.3	1,764.9

Despite the decline in FCR, 2003 saw an increase of 6,900 new jobs in primary agriculture in Alberta, the largest gain in twenty years. Employment rose to 68,200, representing a recovery from a low of 59,500 in 2001.

Following a decade of steady growth, Alberta processing shipments slipped 3.3% in 2003 to \$8.8 billion. Meat product manufacturing fell 14.1% in 2003; however, these losses were offset by significant gains in dairy products (28.4%) and grain & oilseed milling (20.4%). The decline in meat products was primarily due to the total export ban of beef products in the three months following the discovery of BSE in May 2003. Exports of beef products have

adjusted to pre-ban levels following a partial re-opening of borders in September by the U.S. and a number of other countries to boneless beef from animals younger than 30 months. Alberta remains the top producer of red meat products in Canada at about 36.2% of the total.

The food and beverage manufacturing sector employs 25,800 people and consists of over 500 firms. Over 60% of the sector is concentrated in two segments. Meat products accounted for 47% (\$4.1 billion) of total shipments in 2003, and dairy products accounted for 14% (\$1.2 billion). The remaining 39% of food and beverage shipments is diverse, ranging from grain & oilseed milling (the third largest food segment) to baked goods and tortilla manufacturing.



Value of Shipments & Exports, 2003p

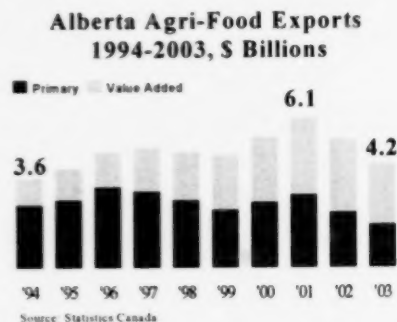
Product Category	Shipments (\$000,000)	Exports (\$000,000)
Meat/Meat Products	4,131.5	1,470.8
Dairy Products	1,205.6	10.2
Grains & Oilseeds	824.4	171.3
Beverage Products	813.2	66.4
Animal Food Mfg.	597.7	173.6
Baked Goods/ Tortilla Mfg.	313.8	19.2
Other Food Products	818.3	294.5
Total	8,789.4	2,206.0

Key Value-Added Players: Lakeside Packers (IBP), Cargill Foods, XL Foods, Centennial Food, Olymel, Maple Leaf Foods, Parmalat Canada, Saputo Milk, Lamb-Weston, McCain Foods, Lilydale Foods

With a value of \$4.2 billion in 2003, international exports of agri-food products declined for the second consecutive year. The 2003 value of exports was down 19.5% from \$5.2 billion in 2002 and 30% lower than the record high of \$6.1 billion in 2001.

Over the past ten years, Alberta has made a significant shift from being an exporter of raw commodities to an exporter of value-added products. Value added exports now account for 58% of Alberta's total agri-food exports, up from 30% in 1994.

In 2003, agri-food exports to the United States declined for the second year in a row, down 33.1% to \$2.0 billion, due mainly to lower exports of live cattle and hogs, beef, wheat, barley and canola seed. Despite the decline, the U.S. remains Alberta's number one export market accounting for 48.5% of total agri-food exports in 2003. Exports to Japan, Alberta's second largest market, at \$786 million in 2003, fell less than 1%.



Agri-Food Exports, 1994-2003

Year	Primary (\$000,000)	Value-Added* (\$000,000)	Total (\$000,000)
1994	2,544	1,095	3,640
1995	2,752	1,248	4,001
1996	3,265	1,431	4,696
1997	3,093	1,775	4,868
1998	2,738	1,975	4,714
1999	2,315	2,230	4,545
2000	2,646	2,649	5,295
2001	2,947	3,109	6,057
2002	2,220	2,981	5,202
2003	1,765	2,420	4,185

* includes exports from crude animal & plant products (\$213 mil in '03)

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Overarching Issues Impacting Growth

Global market opportunities offer Alberta the potential to substantially increase its agri-food industry to \$10 billion in primary production and \$20 billion in value-added processing by 2010. However, a number of overarching issues impacting the growth of the agri-food industry as a whole include:

Global Trade and Market Development –

This issue is key to growth of the value-added agriculture industry as significant growth will not occur without reasonable access to existing and new markets. Increased focus on market development initiatives will be necessary, and increasing our knowledge of potential export markets will be critical. Non-tariff barriers (e.g. U.S. homeland security policies) pose a threat to our existing export markets.

Policy – Government and trade policies can have significant impact on the development and growth of an industry.

- Policy changes will be required in order to facilitate the development of new and emerging industries. Examples include an ethanol policy and domestic regulations allowing health claims on natural health products.
- A strategy needs to be developed and implemented to deal with the potential impact of the U.S. Farm Bill and U.S. food security regulations on Alberta's feed grain and livestock industries.
- Inter-provincial trade barriers need to be reduced in areas such as transportation and food safety regulations to allow for an easier flow of goods and services.
- Proactive changes are required to the domestic regulatory framework in areas such as the Canadian Wheat Board.

Research and Development - A provincial agricultural research and innovation strategy is being developed by multiple stakeholders to address issues in the current R & D system. Several key issues need to be addressed in the system, including the need for innovation, clear direction and focus, and the need for a system to be well-funded, effective, accountable and efficient.

Technology Adoption and

Commercialization – There is a need to enhance and further build on Alberta's ability to scale up and commercialize scientific and technological developments. This includes both new and existing technologies. An initiative should be pursued to establish a food business incubator which can adapt, test and pilot new products and business opportunities.

Management/Labour Supply and

Training – The lack of management expertise, general labour skills and available labour supply are serious issues in several sectors of the industry. Some management development, leadership and worker training programs have been developed for the industry, but these programs will need to be enhanced. Certain industry sectors have significant turnover rates. Programs focused on improved management expertise, labour skills and worker retention will have to be developed.

Water Supply - Availability of water is essential to the growth of the agriculture and food industry. The Alberta government is currently developing a provincial water strategy, with input from AAFRD. Issues to consider are:

- More efficient methods for the reduction of water use need to be developed and implemented.
- Industry and government must ensure that the water supply is protected.
- Industry can work more closely with the provincial and municipal governments to secure a water supply.

Investment - Approximately \$3.2 billion of capital investment in primary production and up to \$4.6 billion in value added processing will be needed from 2002 to 2010 in order to achieve the \$20/\$10 billion opportunity. As a result, a concerted and focused effort to attract significant capital investment will need to be a major priority. Clear leadership and actions, backed by funding, need to be established and exhibited.

On a North American wide-basis, capital funds are being diverted to pay down debt and are being stretched by remodeling old facilities as opposed to building new plants. The food processing industry is not in an expansionary phase. Most new investment in Alberta will result from relocation of existing facilities in expectation of higher profitability in Alberta. Decisions on where to invest traditionally have been made on the basis of raw materials, labour supply and operating costs.

Infrastructure - A \$20/\$10 billion industry will require strong infrastructure to support it. The existing municipal water/wastewater infrastructure program has been a successful component in attracting new investment in food processing to Alberta. Enhancements to this program could help support other infrastructure requirements of the industry.

The \$20/\$10 Billion Growth Opportunity

Based on Alberta's competitive advantage, potential is seen in many areas. Table A provides a summary of the growth opportunities in the primary production and value-added sectors of Alberta's agriculture and food industry. For each of the sectors it includes a level of activity (as measured by cash receipts or value of shipments in 2001), the potential opportunity for 2010, and the capital investment required in the next eight years to achieve the 2010 opportunities.

Specific growth strategies have been developed for five key sectors of Alberta's agriculture and food industry. These include beef, pork, processed meats/ready meals, functional foods/natural health products and non-food/industrial products.

The five sectors identified are ones with significant growth potential (ie. contributing \$1 billion or more in growth by 2010), where Alberta has clear advantages and fits with industry's technological, production and human resource capabilities. Major successes in these key sectors will help create the "critical mass" needed to spur growth of the agri-food industry to \$10 billion (primary production) and \$20 billion (value-added) by 2010.

Details on the five key sector growth strategies are contained in Appendix A. Each of the strategies provides:

- Description of the Sector
- State of Industry (including level of activity in 2001)
- 2010 Growth Scenario (areas and levels of potential growth)
- Value of the 2010 Opportunities
- Key Drivers of Growth
- Strategies
- Timeline of Milestones

A number of important opportunities, with possibly less significant growth potential, also exist in other sectors of the agriculture and food industry. Appendix B provides a brief overview of these opportunities by identifying key drivers and growth scenarios for 2010.

Table A

Primary Production (\$ Billions)

Sector	2001 Receipts	2010 Opportunity	Capital Investment
Beef	\$3.95	\$6.0	\$1.0-1.2
Hogs	\$0.57	\$1.0	\$0.70
Other Livestock*	\$0.65	\$1.0	\$0.2 - 0.3
Crops	\$2.2	\$4.0	\$0.5 - 1.0
Sub-Total	\$7.40	\$12.0	\$2.4 - 3.2
Direct Payments	\$0.12		
Total	\$7.52		

*Other livestock includes poultry, eggs, dairy, sheep, diversified livestock and horses

Value-Added (\$Billions)

Sector	2001 Shipments	2010 Opportunity	Capital Investment
Beef	\$3.1	\$5.0	\$0.2 - 0.25
Pork	\$0.70	\$1.7	\$0.08 - 0.12
Processed Meats	\$0.85	\$3.0	\$0.3 - 0.5
Nutraceuticals/ Functional Foods	\$0.05	\$0.5 - 1.0	\$0.3 - 0.7
Non-Food/ Industrial	\$0.08	\$0.8 - 1.0	\$0.6 - 1.0
Crops Processing	\$1.2	\$1.9	\$0.8 - 1.0
Dairy	\$1.5	\$2.0	\$0.15 - 0.2
Beverages	\$0.75	\$1.0	\$0.1 - 0.15
Potato	\$0.30	\$0.85	\$0.15 - 0.2
Animal Food Mfg. (Inc. Feed)	\$0.60	\$1.0	\$0.12 - 0.15
Other Products & Services	\$0.8	\$1.5 - 2.0	\$0.2 - 0.3
Total	\$9.9	\$20.0	\$3.0 - 4.6

*Other products includes poultry, snack foods, vegetable processing (other than potato), confectionery, pet food, animal by-products, etc.

The \$20/\$10 Billion Growth Opportunity

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Hogs	\$0.57	\$1.0	\$0.70
Other Livestock*	\$0.65	\$1.0	\$0.2-0.3
Crops	\$2.3	\$4.0	\$0.5-1.0
Sub-Total	\$7.48	\$12.0	\$2.4-3.2
Direct Payments	\$0.82		
Total	\$8.3		

*Other livestock includes poultry, eggs, dairy, sheep, diversified livestock and horses

Value-Added (\$Billions)

Sector	2001 Shipments	2010 Opportunity	Capital Investment
Beef	\$3.1	\$5.0	\$0.2-0.25
Pork	\$0.70	\$1.7	\$0.08-0.12
Processed Meats	\$0.85	\$3.0	\$0.3-0.5
Nutraceuticals/Functional Foods	\$0.05	\$0.5-1.0	\$0.3-0.7
Non-Food/Industrial	\$0.08	\$0.8-1.0	\$0.6-1.0
Crops Processing	\$1.2	\$1.9	\$0.8-1.0
Dairy	\$1.5	\$2.0	\$0.15-0.2
Beverages	\$0.73	\$1.0	\$0.1-0.15
Potato	\$0.30	\$0.85	\$0.15-0.2
Animal Food Mfg. (inc. Feed)	\$0.60	\$1.0	\$0.12-0.15
Other Products & Services	\$0.8	\$1.5-2.0	\$0.2-0.3
Total	\$9.9	\$20.0	\$3.0-4.6

*Other products includes poultry, nutria foods, vegetable processing (other than potato), confectionery, pet food, animal by-products, etc.

Considerations for Future Programs

Approximately \$150 million of program funding over the next seven years has been identified to support the investment and customer solutions needed to achieve these aggressive growth opportunities. This level of support offers substantial return, and is quite modest in comparison to the \$1.5 billion of direct payments to producers over the two years 2000 and 2001. About \$90 million would be needed in the initial two years of implementation of the Growth Strategy.

Research and Development

Research and Development Fund – \$50 million

Enhanced research, development and commercialization support will provide for sustainable growth of a viable production base and for further expansion of the value-added agriculture industry. Strategic investment in innovation, including applied research and technology commercialization, represent a clear opportunity for Alberta. Examples of investments suitable for funding include:

- Training, attracting and retaining high quality scientific researchers and leaders
- Enhanced processing equipment at the Food Processing Development Centre (FPDC) and Centre for Agri-Industrial Technology (CAIT)

Business Incubator - \$12 million

Developing companies would be able to migrate from the FPDC or enter the incubator directly depending upon their circumstances or stage of development. The incubator would be an interim step (1-2 years) for companies before establishing their own stand alone operations or entering into a partnership arrangement with an existing processor.

CAIT, which is in leased premises, will be unsuitable in the long term and could be incorporated into the incubator. This is a preferred alternative for CAIT's relocation because it would allow for more flexibility in the commercialization of products.

Agri-Food Development Centre – University of Alberta (Discovery Place) - \$6 million of a total \$12 million.

Research facility to develop new technologies in support of fractionation, ingredient extraction, identification of high value ingredients, conversion technology development and product development in areas of health, food, functional food, natural health products, bio-material and bio-chemical development. Would create a cluster in the Edmonton area for research, innovation and commercialization in value-added crops area. Some of the technologies could also apply to forestry, livestock, cosmetics and energy.

Training – Human Capital : - \$20 million

Develop a Customized Job Training package as an investment attraction tool for major projects. This would be similar in concept to the production worker training fund, but the maximum funding would be much higher at approximately \$200,000 per company or project. Program would target issues to improve management expertise, general labour skills and worker retention.

Value Added Development Fund: - \$20 million

Cost-shared funding for projects related to the adoption of new technology, the development of new products, or expansion into new markets. The Fund could be administered through a partner agency such as the Ag and Food Council in order to alleviate concerns of direct to company funding. Assistance for both operating costs and capital expenditure could be considered, based on industry sharing (i.e. 50/50 operating; 25/75 capital). Assistance could be repayable based on performance.

Infrastructure: - \$15 million

Current support for municipal water/wastewater infrastructure could be enhanced to capture additional elements of required infrastructure to accommodate agri-processing investments. Examples include:

- industrial access roads and improvements
- rail spurs
- power installations and/or utility extensions
- telecommunications/fibre optics

This could increase flexibility to provide a case by case "package" of infrastructure support that would strengthen a company's ability to invest in their own new or expanded facilities.

Access to Capital Programs: - \$15 million

Early Stage Financing (seed capital)

- Assistance to bridge between pre-commercialization and early stage commercial development (i.e. post AVAC type funding). Start-up costs and working capital for early product and market development often erodes shareholder or proprietor equity during early stages (i.e. first 6 months of operation). Specialized financing for start up costs through a "soft credit" as some form of a repayable loan facility on favorable terms is needed by emerging processors.
- AFSC delivery required
- Re-evaluation of AFSC lending criteria necessary, or fund loss provisions captured and offset outside of regular lending practices.

Feasibility and Project Planning Studies

Currently available on a limited basis. Opportunity to enrich the program with enhanced funding such as grants up to \$100,000 for major initiatives that could involve economic analysis, engineering specs, etc.

July 2004

Appendix A

Growth Strategies for Key Sectors

Beef

Beef products include primary production, animal by-products and fresh, frozen and chilled beef products. Production efficiency, further processing activity and expanding market will be key to growth of the beef industry.

Current State of Industry

Alberta is the largest beef producing province in Canada. The province leads the nation in cattle and calf inventories, accounting for 6.6 million head or 42 per cent of the national total in 2001.

In 2001, Alberta slaughtered a total of 2.34 million cattle and calves, or 69.4% of the Canadian total. Among Canadian provinces and US states, Alberta currently ranks 5th in total number of slaughtered cattle and calves.

2001 Cash Receipts 2001 Shipments

\$3.9 Bil
\$3.1 Bil

2010 Growth Scenario

Primary Production

- 400,000 additional breeding cows (20% increase)
- 500,000 additional import feeder cattle into feedlots (50% increase)

Beef Products

(Carcass, Animal By-Products, Fresh, Frozen and Chilled Beef Products)

- New processing capacity equivalent to an additional 1,000,000 head of cattle
- Expansion at existing plants and/or a new plant

\$1.9 Bil

2010 Opportunity (Cash Receipts) 2010 Opportunity Shipments

\$6.0 Bil
\$5.0 Bil

Key Drivers of Growth

- Competitive annual forage and cereal grains for feed
- Continued access to U.S. market to ship cattle and source feeders
- Export market access for processed product
- Shift to case ready meats – driven by economies of scale (labour reduction costs) and food safety issues
- Increased pool of labour (unskilled and skilled)
- Continued availability of water supply

Strategies

- Develop and implement a strategy(ies) to deal with the adverse impact of U.S. Farm Bill
- Increase pasture and forage capacity through better management practices and utilization of available technologies
- Enhance R & D to develop new feed options, environmental practices and processing technologies
- Pursue export market development initiatives for processed products
- Increase processing capacity through investment attraction initiatives
- Increase labour supply through changes to immigration policies
- Fully-utilize and enhance program for wastewater infrastructure for agricultural processing

2004	2006	2008	2010
• Strategy/Program implemented to deal with US Farm Bill • New R&D \$ in place to develop new feed options & technologies • Immigration of workers permitted • Enhanced waste water program • Pasture & forage capacity increases starting to appear	• Breeding Cows: - 2 Mil restored by 2005 • Feeder Imports: - 50,000 new • New processing capacity • Utilization of pasture & forage capacity ↑ by 25%	• Breeding Cows: - 2.25 Mil • Feeder Imports: - 1.3 Mil • New processing capacity • Utilization of pasture & forage capacity ↑ by 25%	• Breeding Cows: - 2.4 Mil • Feeder Imports: - 1.5 Mil • Processing capacity ↑ by 1 Mil to a total of 3.3 Mil head per year

Beef

Beef products include primary production, animal by-products and fresh, frozen and chilled beef products. Production efficiency, further processing activity and expanding market will be key to growth of the beef industry

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2001 Shipments	\$3.1 Bil
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Primary Production	New \$
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Beef Products	\$1.9 Bil
(Carcass Animal By-Products, Fresh Frozen and Chilled Beef Products)	
• New processing capacity equivalent to an additional 1,000,000 head of cattle	
• Expansion at existing plants and/or a new plant	
2010 Opportunity (Cash Receipts)	\$6.0 Bil
2010 Opportunity Shipments	\$5.0 Bil

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2004 2006 2008 2010

Pork

Pork products include primary production, and fresh, frozen and chilled pork products. Continuing global population growth and the increasing world economic growth are driving demand for pork.

Current State of Industry

The total population of hogs (inventory) on farms in Alberta has risen from 0.9 million in 1976 to over 2.0 million in 2001. And, the number of sows in Alberta has increased from 86,500 in 1971 to 200,500 in 2001. A total of 3.6 million pigs were produced for slaughter or export.

In 2001, Alberta slaughtered a total of 2.22 million heads of hogs, or 19.6% of the Canadian total. There are four federally registered pork slaughter and processing plants operating in Alberta.

2001 Cash Receipts	\$570 Mil
2001 Shipments	\$700 Mil

2010 Growth Scenario

Primary Production	New \$
• 300,000 sows (increase of 100,000)	\$430 Mil
• 6.0 Mil pigs (increase of 2.4 Mil)	

Pork Products

(Fresh, Frozen and Chilled Pork Products)

- Doubling of processing output at existing plants (at present, industry operating at 50% capacity)
- New processing capacity

	\$1.0 Bil
	\$1.7 Bil

2010 Opportunity (Cash Receipts)	\$1.0 Bil
2010 Opportunity (Shipments)	\$1.7 Bil

Key Drivers of Growth

- Competitive cereal grains for feed
- CFO legislation now in place to deal with siting issues
- Significant investment \$ needed in both production and processing
- Continued access to U.S. market and growth in other export markets
- Increased pool of labour (unskilled and skilled)
- Continued availability of water supply

Strategies

- Develop and implement a strategy(ies) to deal with impacts and exploit opportunities of the U.S. Farm Bill
- Facilitate capital investment to establish or expand Alberta's hog production and processing industry
- Encourage a sustainable primary production sector through increased competitiveness, and promotion of financing options, alternative business arrangements and risk management tools
- Enhance R & D to develop new feed options, environmental practices and processing technologies
- Ensure the regulatory framework balances environmental sustainability and growth of the pork industry
- Maintain and enhance access to export markets
- Increase labour supply through changes to labour policies
- Fully-utilize and enhance programs for water and wastewater infrastructure for agricultural production and processing

• 200,000 sows • 3.6 Mil pigs • Strategy/Program implemented re US Farm Bill • New R&D \$ in place • Better business practices promoted to & implemented by industry • Barrhead plant operational • Enhanced waste water program	• 250,000 sows • 4.7 Mil pigs • New export markets developed	• 275,000 sows • 5.4 Mil pigs • Expansion at major processing facilities (re second shift added)	• 300,000 sows • 6.0 Mil pigs • 4.5 Mil hogs slaughtered • New hog slaughtering facility announced
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2004	2006	2008	2010
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Pork

Pork products include primary production, and fresh, frozen and chilled pork products. Continuing global population growth and the increasing world economic growth are driving demand for pork.

Current State of Industry

The total population of hogs (inventory) on farms in Alberta has risen from 0.9 million in 1976 to over 2.0 million in 2001. And, the number of sows in Alberta has increased from 86,500 in 1971 to 200,500 in 2001. A total of 3.6 million pigs were produced for slaughter or export.

In 2001, Alberta slaughtered a total of 2.22 million heads of hogs, or 19.6% of the Canadian total. There are four federally registered pork slaughter and processing plants operating in Alberta.

2001 Cash Receipts	\$570 Mil
2001 Shipments	\$700 Mil
2010 Growth Scenario	New \$
Primary Production	\$430 Mil
• 300,000 sows (increase of 100,000) • 6.0 Mil pigs (increase of 2.4 Mil)	
Pork Products (Fresh, Frozen and Chilled Pork Products)	\$1.0 Bil
• Doubling of processing output at existing plants (at present, industry operating at 50% capacity) • New processing capacity	
2010 Opportunity (Cash Receipts)	\$1.0 Bil
2010 Opportunity (Shipments)	\$1.7 Bil

Key Drivers of Growth

- Competitive cereal grains for feed
- CFO legislation now in place to deal with siting issues
- Significant investment \$ needed in both production and processing
- Continued access to U.S. market and growth in other export markets
- Increased pool of labour (unskilled and skilled)
- Continued availability of water supply

Strategies

- Develop and implement a strategy(ies) to deal with impacts and exploit opportunities of the U.S. Farm Bill
- Facilitate capital investment to establish or expand Alberta's hog production and processing industry
- Encourage a sustainable primary production sector through increased competitiveness, and promotion of financing options, alternative business arrangements and risk management tools
- Enhance R & D to develop new feed options, environmental practices and processing technologies
- Ensure the regulatory framework balances environmental sustainability and growth of the pork industry
- Maintain and enhance access to export markets
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2004 2006 2008 2010

Processed Meats/Ready Meals

Processed meats includes products such as meat snacks, sausages, cooked meats, portion cuts and case ready meats. Ready meals are prepared food items that replace what would otherwise be eaten at home. They are diverse products types that are marketed in frozen, refrigerated and fresh formats. These include entrees, pizzas, sandwiches, soups, meat pies, side dishes, ethnic foods and meal components.

Current State of Industry

Processed Meats	
> Federal plants & 250+ provincial plant	\$600 Mil
Ready Meals	
> 30 small to medium-sized companies	\$200 Mil

2001 Shipments

\$850 Mil

2010 Growth Scenario

New Shipment \$

Expansion by Existing Industry

• Processed Meats	\$200 Mil
• Ready Meals	\$480 Mil

New Investment

• Processed Meats	\$500 Mil
> Bacon & Ham (1 New Plant)	\$300 Mil
> Case Ready (2)	\$150 Mil
> Poultry Products (1)	\$200 Mil
> Other (4)	
eg. Snack, Cooked Meats, Fresh Sausage	

• Ready Meals	\$100 Mil
> Prepared/Frozen Entrees (2)	\$40 Mil
> Natural/Organic (2)	\$90 Mil
> Other (5)	
eg. Diversified, Bowl Meals, Ethnic Meals	

2010 Opportunity

\$3.0 Bil

Key Drivers of Growth

- Increased supply of slaughter cattle and hogs
- Increased availability of poultry (changes to supply management system)
- Increased pool of labour (unskilled and skilled)
- Attraction of major investor(s)
- Research and development of innovative products
- Continued growth in food service and HMR markets (ie. shift in demand toward convenience, ready to serve foods)
- Growing interest in new tastes and niche marketing (ie. organics, natural, etc.)

Strategies

- Increase exports of processed meats and ready meals
- Increase development of new product and processing technologies
- Increase processing capacity through targeted investment attraction activities and market development initiatives
- Increase business management and production worker skills through targeted training and recruiting programs
- Increase processors' ability to access capital
- Reduce imports of processed meats into Alberta through targeted market research and import replacement initiative
- Facilitate increased supply of pork and poultry meat for further processing

2004	2006	2008	2010
• \$3 Mil product & mkt development initiative operational • Policies changed to increase poultry • Access to capital workshops conducted & 1:1 consulting program in place • Invest. attraction presentations made • Case ready (beef) program initiated with 1 major retailer & processor	• Construction began on ham/bacon/ sausage plant • Increased poultry supply & new processed poultry plant announced • New case ready plant established for both beef & pork • Expansion of pork production capability evident to investors • Fifty new processed meat products test marketed	• Processed meats & ready meals sales of \$2 Bil • \$170 Mil in new investment (2002-08) • Poultry processing plant operational • New bacon/ham/ sausage plant operational by 2007 • Ready meal production capacity in 10 new facilities	• Processed meat & ready meal sales nearing \$3 Bil • Processing capacity increased by 17 new additional plants • Mature & globally competitive processed meats & ready meal industry

Non-Food/Industrial Products

Industrial agriculture focuses on the use of bio-based renewable resources (agricultural inputs) in the manufacture of basic chemicals, intermediates, and end products in the non-food sector.

Current State of Industry

Alberta's agri-industrial processing sector is in its early stages of commercialization and expansion. Currently only a handful of companies have been identified within this sector. Products manufactured and exported include fuel alcohol as gasoline oxygenate, gluten, animal blood based meat binder, strawboard and biodegradable lubricants.

2010 Shipments	\$50 Mill
2010 Growth Scenario	New Shipment \$
Bio-Chemicals	
• Bio-Fuels	
> Ethanol (expansion & 4-6 new plants)	\$300-400 Mill
> Bio-Diesel (3-6 plants)	\$200-500 Mill
> Co-Generation	
• Bio-Lubricants (expansion & 1 new plant)	\$40-50 Mill
Bio-Materials	
• Ag-Fibres eg. Strawboard (3 new plants)	\$120-150 Mill
• Ag-Fibre Composites eg. Molded Building Products Special Papers Automotive Parts	
Personal Care/Health (Ingredients only)	
• Cosmetics	\$10-20 Mill
• Essential Oils	
• Pharma/Vet Products	
• Cosmeceuticals	
• Molecular Farming/Biotech	
Bio-Polymers/Plastics	
• Bio-Medical	Under Assessment
• Bio-Degradable Packaging	
2010 Opportunity	\$800 Mill - \$1 Bil

Key Drivers of Growth

- Continued positive impact of environmental issues on demand
- Research and development of new technologies (eg. energy substitution, new bio-material uses, crop utilization, etc.)
- Policy changes that encourage adoption and usage of ethanol
- Support for early stage development and financing

Strategies

- Investigate policy issues/changes to encourage production and consumption of bio-fuels. Recommendations developed and forwarded to Minister
- Develop an Alberta bio-plastics initiative and cluster network
- Identify and prioritize opportunities in ag-fibres and bio-composites
- Identify ingredient opportunities for personal care and cosmetics sector from agricultural resources
- Identify market opportunities/strategy development for bio-lubricant industry
- Enhance infrastructure for R&D, technology transfer, project commercialization and business/investment development

2004	2006	2008	2010
• Policy change legislated for bio-fuels • New \$ and strategy for R & D in place • New market opportunities identified • Expansion of CAIT facility	• Expansion and 2-4 new ethanol plants • Bio-Diesel legislation to reduce sulphur emissions in place • Additional ag-fibre capacity online • New technologies developed	• 4-6 ethanol plants now operational • 2-4 new bio-diesel plants • 1 new ag-fibre plant • 1 new bio-lubricant plant • New technologies are being financed & commercialized	• 2 new bio-diesel plants (for a total of 3-6 plants) • New plants operational in: • personal care/health ingredients • Bio-polymers/plastics

Functional Foods/Natural Health Products

Functional Foods and natural health products generally refer to food or food constituents, respectively, that provide health benefits and/or reduce the risk of chronic disease beyond traditional nutrition functions.

Current State of Industry

Specific market data for the Alberta functional food/ natural health products sector has been estimated at approx. \$40-50 million. The industry is diverse and manufactures a variety of products such as omega-3 eggs, performance bars, natural health and athletics supplements, and herbals/ botanical products.

2010 Growth Scenario

Crops	Functional Foods
Dairy	• enhancing natural components (eg. increased CLA in milk/meat)
Beef	• formulated products (eg. Added fibre in snack foods)
Diversified Livestock	Natural Health Products
Microbial	• Extracts for supplements, cosmetics and veterinary products

2010 Opportunity \$500 Mil - 1.0 Bil

Key Drivers of Growth

- Aging population with increased health concerns and acceptance of alternative medicines
- Export market access (domestic market opportunities will increase with regulatory changes allowing health claims)
- Increased support of research and development (new extraction and fractionation technology)
- Strengthened and linked R & D capacity in crop utilization research and commercialization
- Significant capital investment in pre-commercialization and start-up companies

Strategies

- Establish an Alberta FF/NHP networks with R & D community, health sector and industry Develop
- Increase R & D capacity through research institutions in Alberta
- Enhance and develop FF/NHP expertise and knowledge base in Alberta
- Identify new market and product development opportunities for FF/NHP
- Develop an Alberta FF/NHP industry development strategy including investment attraction, industry development and research
- Participate in a newly developed pan-western Canadian FF/NHP network

• \$500 M - \$1.0 B

• \$175 M

• \$100 M

- \$55 M
- FF/NHP position in AAFRD established & funded
- Filed (2003)
- CI conducted identifying FF/NHP opportunities for Alberta (2003)
- Industry development strategy completed
- 1-2 research chairs established and funded
- FF/NHP networks established
- 2-3 more research chairs established and funded
- FF/NHP industry emerging with establishment of several start-up companies

2004

2006

2008

2010

Appendix B

Other Sector Growth Scenarios

Other Livestock industries

	2001 Receipts	2010 Growth Scenario	2010 Opportunity	Key Drivers
Poultry & Eggs	\$200 Mil	Doubling of chicken production, and new high value industrial egg processing plant.	\$300 Mil	• Ability to produce outside of supply management (ie. thru direct production contracts with processors for export markets) • Local population increases provide incremental growth through increased quota allocation • Further development of value-added product
Dairy	\$348 Mil	Incremental growth to meet population increases. Contract milk production for export.	\$450-500 Mil	• Resolution of trade issues regarding contract milk production for export • Local population increases provide incremental growth through increased quota allocation • Further development of value-added product
Diversified Livestock	\$20-30 Mil	Aquaculture \$10 Mil (2001) → \$30 (2010) Bison \$3-4 Mil (2001) → \$30 (2010) Cervids \$14 Mil (2001) → \$20 (2010) - (elk, deer, etc.)	\$80 Mil	• Reduction in regulatory and trade restrictions • Integrated and coordinated market development initiatives • Access to restricted areas (i.e. water) • Processing capacity available • Need to increase producer knowledge/awareness of the costs of processing and marketing
Horses	\$80 Mil	Incremental growth only	\$100 Mil	• Incremental growth • Continued access to export markets

Other Livestock industries

	2001 Receipts	2010 Growth Scenario	2010 Opportunity	Key Drivers
Poultry & Eggs	\$200 Mil	Doubling of chicken production, and new high value industrial egg processing plant.	\$300 Mil	• Ability to produce outside of supply management (ie. thru direct production contracts with processors for export markets) • Local population increases provide incremental growth through increased quota allocation • Further development of value-added product
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Crops/Cereal Productions

	2001	2010 Growth Scenario	2010 Opportunity	Key Drivers
Farm Cash Receipts	\$2.27 Bil	No increase in total acreage. Growth through increased yields and shift towards higher value crops.	\$4.0 Bil	
Livestock Feed (On-Farm Use of Feed Grain & Forage Crops)	\$1.5 Bil	Increased production volumes through efficiency improvements	\$2.5 Bil	• Research & Development – eg. low-phytate barley, high protein crops, new/diversified feed crops • Increased livestock numbers

*Please note livestock feed relates to feed grains and forage crops used by producers and not sold at the farm gate.

Sub-sectors within Crops/Cereals

	2001 Receipts	2010 Growth Scenario	2010 Opportunity	Key Drivers
Wheat	\$814 Mil	Incremental growth	\$1.0 Bil	• Maintenance of export markets
Canola	\$530 Mil	Incremental growth	\$800 Mil	• Maintenance of export markets • Increasing processing sector
Specialty Oilseeds	\$20 Mil	Production of higher value oils (no acreage increases).	\$500 Mil	• Production of higher-value oils for industrial applications • Development of marketing programs to specialty channels
Potatoes	\$107 Mil	Increased acreage	\$250 Mil	• Expansion of potato processing industry (new plant & doubling of production at existing plants)
Vegetables (other than potato)	\$55 Mil	Increased acreage	\$200 Mil	• Expansion of value-added processing
Pulses (other than for feed)	\$30-40 Mil	Increased acreage, new crop species and increased yields	\$100-120 Mil	• Research and development of new varieties/species • Additional processing capacity

Sub-sectors within Crops/Cereals (Cont'd)

	2001 Shipments	2010 Growth Scenario	2010 Opportunity	Key Drivers
Special Crops (Spices, Herbs, Fruit, etc.)	\$40-60 Mil	Increased acreages	\$100 Mil	Trend toward health related products (eg. anti-oxidants, plant-based components, etc.)
Malt Barley	\$120 Mil	Increased malt barley acreage with overall increase in barley production	\$250 Mil	- Research & development - eg. disease/pest control, low-phytate barley - Access to emerging markets - Expansion in malt processing industry
Crops for Plant-made Pharmaceuticals	\$0 Mil	New crop varieties and species	\$50-100 Mil	- Aging population with increased health concerns and acceptance of alternative medicines - Increased support of research and development (new extraction and fractionation technology) - Strengthened and linked R & D capacity in crop utilization research and commercialization
Greenhouse	\$90 Mil		\$200 Mil	- Predictability in energy prices - Development and adoption of more efficient energy systems - Lower production costs through improved technologies (R & D) - Adoption of value chains - Improved marketing channels

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Other Value-Added Industries

	2001 Shipments	2010 Growth Scenario	2010 Opportunity	Key Drivers
Crop Processing Grain & Oilseed Processing Bakeries & Tortilla Mfg.	\$800 Mil	Oilseed - increase in capacity utilization at existing plants	\$950 Mil	Access to export markets (eg. Chinese entry into WTO)
	\$255 Mil	Expansion by existing industry (ie. doubling of frozen dough, increase in specialty products). New frozen dough plant (1) New pasta plant(s) with regional/export mkt. Focus	\$650 Mil	- Changes in grain marketing policy (Canadian Wheat Board) - Continued market segmentation and growth of specialty/niche products (enhancement of identity preservation systems) - Strengthened and linked R & D capacity in crops - Development of sustainable crop production systems
Malt	\$120 Mil	Expansion at existing plants New plants (2)	\$370 Mil	- Access to emerging markets - Changes to grain marketing policy (Canadian Wheat Board) - Quality and disease-free raw materials
Dairy Products	\$1.5 Bil	Incremental growth to meet population increases Further value-added products Eg. Expansion at yogurt plant & cheese plant	\$2.0 Bil	- Resolution of trade issues regarding contract milk production for export - Local population increases provide incremental growth through increased quota allocation - Further development of value-added product
Beverages	\$727 Mil	New contract (private label) packaging and entry into specialty export markets	\$1.0 Bil	- Access to emerging markets - Increase in contract packaging opportunities

Other Value-Added Industries

	2001 Shipments	2010 Growth Scenario	2010 Opportunity	Key Drivers
Potato	\$300 Mil	Expansion by existing plants (doubling production) New potato chip plant New potato salad plant	\$850 Mil	• Expansion of reliable, high quality potato production • Increased market demand in primary export markets • Competitiveness of Alberta as a processing location vs. other regions
Animal Food Mfg. (Includes Feed)	\$597 Mil	Expansion and replacement of older plants with higher capacity plants	1.0 Bil	• Expansion of the Hog and poultry production
Vegetable Processing (other than potato)	\$30-35 Mil	Fresh-cut/fresh salads, and frozen vegetables	\$100 Mil	• Development of value chains and/or other innovative business to better coordinate industry activities • Food safety concerns regarding traceability and consistent quality
Pet Food	\$80-85 Mil	New plant or doubling by existing plants	\$100-120 Mil	• Increase in availability of raw materials with livestock expansion • New private label opportunities • Export Replacement potential
Animal By-Products	\$200-220 Mil	New hide, blood and offal processing capacity	\$300 Mil	• Increase in availability of raw materials with livestock expansion • Expansion in processed meat sector • Changes in branding policy • New export market opportunities for non-traditional (offal) products
Specialty Foods	\$15-20 Mil	New small to medium-sized plants with national distribution manufacturing gourmet foods, sauces, confectionery, etc.	\$50 Mil	• Abundant and low-priced supply of sugar (confectionery) • Increasing demand for specialized/niche products

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Other Industries

	2001 Revenues	2010 Growth Scenario	2010 Opportunity	Key Drivers
Farm Direct Marketing	N/A	Expansion of profitable alternative marketing channels for farmers. These include farmers' markets, farm gate sales, farm stores, direct to restaurants, u-pick, etc.	N/A	• Growing consumer interest in establishing direct relationships with those producing and processing their food supply • Harmonization and increased knowledge of regulatory requirements • Developing market focused relationships between meat producers and processors (ie. provincially inspected)
Ag-Tourism	N/A	Agriculture-based tourism attractions, events and retail operations	N/A	• Increased interest in traveling closer to home • Development of signage policy to increase awareness of ag-tourist destinations
Renewable Fibre Industry	\$0 Mill	Development of Agri-Forestry industry (ie. woodlots)	\$300-400 Mill	• New wood fibre source needed as current supplies are finite and diminishing • Ability to use as carbon credits (increasingly more important with Kyoto ratification) • Tax ruling change allowing inter-generational transfer of farm woodlots

Other Industries

	2001 Revenues	2010 Growth Scenario	2010 Opportunity	Key Drivers
Organics	\$5 Mil (primary) \$5 Mil (value-added)	Increased exports of raw commodities, replacement of imported value-added products, and product line extensions by existing non-organic processors	\$10 Mil (primary) \$10-15 Mil (value-added)	- Continued increases in consumer demand for organic products - Increasing awareness of processors of the availability of organic inputs and product opportunities. - Entry of larger organic retailers into Canadian market and increased organic offerings by existing retailers
Honey Production	\$20 Mil		\$60 Mil	- New marketing/distribution strategies (eg. Packing - smaller serving sizes) - Development of export markets - Importation of bees from U.S. (currently not allowed)

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